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ABSTRACT

Some of the administrative and organizational issues in creating a gopher, specifically a library gopher for university libraries, are discussed. In 1993 the Electronic Collections Task Force of the New Mexico State University library administration began to develop a library-based gopher system that would enable users to have unlimited access to local information stored electronically. Creating the gopher required procedures that could be divided into the technical process and the content process. The system installed the latest version of gopher software for UNIX available through the Internet. UNIX training was provided for members of the system, who then began bringing content to the gopher. While making links to the gopher is relatively easy, deciding which links to make is difficult. Adding files is more time-consuming because they must be in ASCII format. Because the Internet is constantly changing and evolving, a gopher is never finished. Its update and maintenance require constant attention, but the reward is in increased information availability for users. Attachments discuss gopher awareness and preparing information for the gopher. (SLD)

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Bringing Up Gopher: Access to Local & Remote Electronic Resources for University Library Users

by Melvin Marlo Brown

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BRINGING UP GOPHER: ACCESS TO LOCAL & REMOTE ELECTRONIC RESOURCES FOR UNIVERSITY LIBRARY USERS

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NMSU Library

This paper addresses some of the administrative and organizational issues involved with creating a gopher--specifically a library gopher. As librarians we tend to focus on the content of information and on organizing it so that users can retrieve relevant sources that will satisfy an information need. The Internet gopher represents a relatively new way of making resources available. Librarians can use their experience in organizing and providing information to creatively incorporate Internet tools into refcrence services in order to expand the possible sources of information available to library users.

The NMSU Library administration appointed an Electronic Collections Task Force (ECTF) in the Fall 1993 with one of its charges being to develop a plan for integrating electronic collections and information into the library. The ECTF decided to address this charge in part by developing a library-based gopher system which would enable library users to have unlimited access to local information stored electronically. At the same time, the library gopher would enable users to navigate through the vast resources on the Internet, locate needed information, and deliver that information to their workstations. At this time some library staff already had extensive experience using gophers to find information on the Internet; others, including most of the administration, had minimal knowledge of Internet resources and tools. Thus, our gopher development plan included an explanation of network discovery and retrieval tools in general and gopher specifically. We also addressed both technical and content processes and plans for training librarians to "feed" and otherwise maintain the gopher.

Other local entities, including NMSU-CANTO, and ACCA--the NMSU student computing organization, have also developed information servers. CANTO is also developing a World Wide Web (WWW) server as its main vehicle for distributing campus information. The NMSU main gopher is registered with the "mother" gopher at the University of Minnesota and each NMSU gopher main menu links to "Other NMSU gophers." The library gopher also provides a link on its main menu to the NMSU WWW home page.

The Doña Ana Regional Network (DARNET) may eventually develop its own network information server. The division of labor currently envisioned sees the library gopher as a source for primarily academic information while CANTO will provide access to course schedules, financial aid information, campus directories, CANTO documentation, and other administrative information. In the future, the DARNET gopher may address community information needs not met by the University gophers.

The decision to create a library gopher rather than a WWW server was based on several factors:

- Most information resources are text-based, thus the graphical WWW interface is not essential to distribute this information; in the future the library may integrate a WWW server for certain unique resources such as archival materials, manuscripts, photographs, maps, etc.
- The graphical interfaces to the WWW (i.e., Mosaic) function very slowly on most PCs currently in use in the library; for training and demonstrations, Mosaic is just too slow.
- The gopher interfaces to the net work well on very low-end PCs and terminals, even those with monochrome monitors and no graphics capabilities.
- The structure of well-designed gopher menus assists basic library users in their initial explorations of the Internet.

The library gopher provides enhanced access to information of local interest and unique NMSU resources while also helping to make the vast world of information on the Internet more manageable and accessible to library users. The library gopher server also makes unique NMSU resources accessible to Internet users worldwide. The following are some specific ways that the NMSU library gopher is being used to expand access to electronic information:

- The gopher server archives and disseminates library research guides, bibliographies, library and campus directories, newsletters and other local publications.
- The gopher enables the library to establish and maintain electronic journal subscriptions, and provide unlimited access to the information in these journals to our users.
- Gopher can increase access to information outside of our collection by providing links to remote sites where electronic materials are archived.
- Gopher provides a vehicle for storing and delivering unique information within the NMSU community and beyond.

- Gopher makes it possible to deliver full-text information in electronic format to users outside of the library.
- Gopher provides a user-friendly interface to a vast amount of information on the Internet. Menus help new users find their way to unfamiliar resources and to retrieve information with minimal instruction.
- The library gopher facilitates the integration of Internet resources into reference, bibliographic instruction and staff training activities.

CREATING THE LIBRARY GOPHER

The process of creating the library gopher required various procedures which can be conceptually divided into the **technical process** and the **content process.**

Technical process

The software needed to run a gopher is available free of charge and can be downloaded from the Internet. We installed the latest version of the gopher software for UNIX which is available via anonymous FTP from the University of Minnesota at <boombox.micro.umn.edu>. Installation was carried out by the NMSU Computing and Networking Technology Organization (CANTO) and a member of the library Systems Office. Library Systems will continue support of the software and provide updates when necessary. The total amount of disk space needed on the server for the software is approximately 10 megabytes. The amount of disk space needed for the local gopher data itself (publications, link files to other gophers, etc.) is large and is expected to grow. At this point, the library's Sun workstation (LIB) has 1.2 gigabytes of free space, which is adequate disk space to accommodate a gopher and its data.

The local gopher data is kept in a directory on the library's Sun workstation accessible to the staff. Some training on user restrictions, editing, and syntax in UNIX was required for those staff members who would maintain parts of the gopher. The original proposal to the library administration called for the formation of a Library Gopher Action Group (LIBGAG) that would receive the necessary training in UNIX file management and would be responsible for the creation and

maintenance of the gopher. The original members of this group included Reference staff with experience in using Internet resources and Systems staff who could provide the training and interact with CANTO. After the successful "birth" of the baby gopher in August 1994, the LIBGAG was given official recognition by the library administration--an essential step in the continuing growth and development of this new information resource.

"Harrowing" UNIX training was a prerequisite for members of the LIBGAG. Several sessions were conducted in Spring and Summer 1994 as soon as the gopher software was loaded and operating. The training provided a basic introduction to UNIX file management and included the following topics:

- directory structure
- using UNIX online help
- important commands
- an explanation of user restrictions and how to change them
- explanation of gopher objects such as files, directory links, telnet links, etc.
- using FTP to get files into a gopher directory
- preparing local documents
- adding link files
- creating .cap files to aid in menu design and local links, etc.

As the process of "feeding" the baby gopher got underway, other issues arose that were usually discussed by the LIBGAG via email. The group found it necessary to have several meetings in order to reach consensus on certain issues such as the structure and content of the initial menu. Technical training issues will be a continuing part of the gopher maintenance process. The LIBGAG plans to have regular meetings to discuss both technical and content issues. Small group training sessions will be held to upgrade and maintain the knowledge level of the group and integrate new members into the LIBGAG.

Feeding the Gopher: The Content

After undergoing training, LIBGAG members began the process of bringing content to the gopher. It was agreed that the initial menu structure could only be changed by group consensus and that quality of information sources was more important than quantity. The plan was to develop general sections (i.e.,

Current Events and Facts, Figures and Reference) and some specialized subject areas, which would include links to remote sources and access to locally-loaded files. After claims to certain subject areas were staked, the next step was to identify the quality sources in those areas.

Making Links

Making a link to a gopher or a section of a gopher is relatively easy, a matter of typing six short lines. The challenge is to determine which links to make. Members of the LIBGAG have developed some strategies for effective exploration of the Internet to identify the best resources in a subject area, using a combination of systematic exploration, wandering, and following leads.

Guides to gopher resources are available through gophers, and one of the first links was to some of these guides:

- The Association of Research Libraries (ARL) Directory of Electronic Journals, Newsletters and Academic Lists
- The Global Electronic Library (by Subject), part of the Library of Congress Marvel Gopher
- Gopher Jewels, Part of the University of Southern California Campus Wide Information System Gopher
- Subject Guides to the Internet from the University of Michigan

Well-known and well-constructed gophers (some of which are highlighted in a Choice Gophers section of the library gopher) have also been valuable tools for identifying specialized subject resources. However, some of them are not frequently updated. The following have been especially helpful:

- Rice University Gopher (chico.rice.edu)
- Marvel, Library of Congress Gopher (marvel.loc.edu)
- University of California at Irvine Gopher (peg.cwis.uci.edu/Virtual Reference Desk)
- InfoSlug, Univ. of California at Santa Cruz (sclibx.ucsc.edu)
- UMD Info, Univ. of Maryland (info.umd.edu)

Nearby gophers might offer resources of regional interest within a subject area, and certain other kindred gophers can be identified; for example, other land grant colleges with strong agricultural programs might house a gopher that includes useful agricultural sources, even if it the gopher itself might not be well known.

Those who are developing subject areas of the gopher also subscribe to listserv lists and Usenet newsgroups that pertain to the subject, where new gopher resources are announced. FAQs for newsgroups often identify gopher resources as well. The Internet Scout Report, available through free subscription through the Internet, announces new Internet services as they appear. Veronica searches by keyword sometimes unearth hidden resources, and a LIBGAG member may stumble upon something valuable by chance while searching for something else. [See attachment A for other current awareness resources.]

Adding Files

Although links are easy to make, they can be troublesome because they are unstable. Menu structures change, sites disappear, and some are not maintained. Links gone bad lead to error messages and user frustration. Files, on the other hand, are stable. Adding a file to the gopher takes more time and effort than creating a link, because the file must be in ASCII format. Converting an existing word-processed or desktop-published file to ASCII format and FTPing it to the gopher can require several steps.

The simplest kind of file to add is one that is retrieved from another gopher, because it is already in ASCII format, and can be retrieved simply by typing "m" and an email address. The decision to link to files rather than putting them into the gopher is usually made when they are in a directory that is frequently updated or if they are part of a larger structure that should be included in the gopher, or if there is a very large number of individual files located together.

Almost all library-produced publications have been made available through the gopher. These include bibliographies and research guides compiled by library staff, and general information about the library. This usually involves conversion from Macintosh PageMaker format, a fairly complex process. The library's publications committee, whose members are not all members of the LIBGAG, is responsible for preparing in-house publications for the gopher. New Books lists, arranged by broad subject categories, will be added to the gopher in the near future.

From the earliest planning stages, locally-produced information resources have been considered an important element of the library gopher. The gopher provides access to local information to Internet users worldwide, and can be considered a unique NMSU contribution to the Internet community. A continuing

effort is underway to obtain newsletters and other information from campus and community groups. So far the following local newsletters have been made available on the library gopher:

- International Briefs--Newsletter of the Center for International Programs
- Newsletter of the New Mexico Border Health Council
- Frontera--Newsletter of the Association of Borderlands Scholars

The possibilities for adding local information resources to the library gopher are many. Library subject specialists, even those who are not members of the LIBGAG, are encouraged to work with library liaisons in the academic colleges to identify and gather local resources that could be made available to a wider audience through the gopher. Local entities are encouraged to provide their files in ASCII format, or to provide their databases in a form that could be searched by the gopher WAIS index. A guide to preparing information for the gopher has been developed, but some assistance may be necessary in converting contributed files to the necessary format [see attachment B].

The gopher also provides access to local resources of interest only to the campus community. These might include items such as sample exams from professors, reserve readings for classes, and the minutes of the ASNMSU Senate, the Faculty Senate and the Academic Deans' Council.

LAUNCHING THE GOPHER

In addition to the charge to "develop a plan for integrating electronic collections and information into the library," the Electronic Collections Task Force was also charged with putting on a workshop for library staff to discuss the present and future of electronic resources in the library. The workshop, "Libraries on the Electronic Frontier," provided a perfect opportunity to introduce the gopher to the staff at a "coming out party" and to train all library staff to use gophers to explore Internet resources.

The staff were encouraged to explore the various parts of the gopher and to try to "break" it. Since gophers are designed to help the non-technical person navigate and use the Internet, the library staff in

general were better suited to the initial testing and evaluation of the gopher than its more UNIX-oriented creators were.

The library staff were instrumental in pointing out minor problems and logic errors in the gopher. The goal was to create something which a beginner could use with little trouble. For gopher testing purposes, the less a person knows about computers and the Internet, the more valuable they are. A beginner will do things that an experienced user would never think of. Thanks to the efforts of the library testers, a much improved baby gopher was finally presented to the public.

MAINTAINING AND SUPPORTING THE GOPHER

The Internet is not a static entity: it is constantly changing and evolving. New sites and resources appear all the time, and others are discontinued. Consequently, a gopher is never "finished." Everything featured on the gopher must periodically be looked at and reevaluated. The LIBGAG oversees this ongoing and time-consuming task.

Library publications are regularly updated to reflect changes in the library collections and services. The gopher created a new burden for the publications committee: not only did they have to oversee the creation and distribution of new library publications, but someone would have to ensure that the latest version of each publication appears on the gopher. Adding more on-campus and locally-produced files will further complicate gopher maintenance, as each item added requires regular evaluation and/or updating. Library staff or faculty acting as liaisons to the people, departments and organizations producing the documents could greatly simplify the maintenance of these publications on the gopher.

Most of the resources on the library gopher are links to other sites on the Internet. Because these resources are on systems not controlled by NMSU, they may change or even be shut down without warning. Regular evaluation and testing of all links to remote sites is necessary to ensure that the links function properly. A link which does not work can cause frustration and confusion for our patrons, especially those who are just beginning to use the Internet.

Communication with the "owner" of a remote resource is the best means of addressing a problem with a gopher link to another system. The best person to contact is generally the administrator of the resource. A polite e-mail message or telephone call detailing the problem and when and where it occurred can be very helpful to the systems people of the remote site and may provide information as to when the problem will be corrected.

Just as the Internet is a constantly changing entity, the library gopher continues to change and evolve. Resources which become outdated with no replacement in sight or which do not fit well within our evolving environment must be removed from the gopher. Additionally, new things are always appearing on the Internet, so the members of the Gopher Action Group are continually looking for new resources to make available to our patrons through the library gopher.

Institutional Commitments

Creating and maintaining a gopher requires a lot of staff time initially, followed by an ongoing responsibility if the gopher is to continue to be a useful resource. It also requires computer time and storage space. Both the long term and the short term costs of the gopher were made clear to the library administration in the project proposal. Without the full backing of the administration, the gopher project would have been impossible.

Training and Promotion

The ongoing gopher maintenance requirements are matched by responsibilities in the areas of training and promotion. In the academic environment, there is a new class of freshmen every year. These new students have to be made aware of library Internet resources and taught how to use them effectively.

The initial promotion of the gopher has been followed by changes to several library "how to" publications. These publications have been modified to make library users aware of the gopher and how gophers and the Internet can become a vital part of the research process. Gophers and the Internet have also been promoted in library instruction sessions, both on campus and in the Las Cruces Public Library. Another avenue for promotion which has been explored is the Internet itself. Announcements of the library

gopher have been made on Usenet and on BITNET listservs. The program of promotion has paid off in increased use of the gopher, as shown by recent usage statistics. Gopher promotion will be continued indefinitely.

Gopher training of the library faculty and staff began with the "Libraries on the Electronic Frontier" workshop and continued with individualized training and instruction. For library patrons, library "how to" publications now mention the gopher and tell how it can be used as a part of library research. Library orientations now include information on the gopher, and the gopher has figured prominently in several Internet training sessions given to NMSU faculty, staff and students.

Internet usage is on the increase at NMSU. Internet training has been in great demand with the university faculty, staff and students. Only with the backing of the library administration can the library faculty and staff continue to meet the need for more and more gopher and Internet training. An Internet Training Group (IT) has been appointed by the library administration to design and implement library and campus-wide Internet training.

Attachment A

CURRENT AWARENESS: GOPHER & WWW

USENET

comp.infosystems.gopher

vmsnet.infosystems.gopher

comp.infosystems.www.misc

comp.infosystems.www.users

comp.infosystems.www.providers

comp.internet.net-happenings

OTHER

pacs-l@uhupvm1.uh.edu	Public Access Computer Systems Forum
net-happenings@is.internic.net	Internet Announcements List
go4lib-l@ucsbvm.ucsb.edu	Library Gopher List
gopher-announce@boombox.micro.umn.edu	Gopher Developments: Software, Resources, etc
web4lib@library.berkeley.edu	WWW for Libraries & Librarians

Internet Scout Report: Weekly report of new gopher and WWW servers and other updates on the Internet. Available in several formats:

gopher:	is.internic.net/Information Services
WWW:	http://www.internic.net/scout-report/
email:	majordomo@is.internic.net subscribe scout-report

Attachment B

Preparing Information for the Gopher

Word-processed or desktop-published information needs to be reformatted as ASCII text.

The following guidelines for creating gopher text are condensed from instructions on the ED/OERI gopher:

Set the left margin to 0" and the right margin to 1.5"
Use Courier 10 cpi
Use the basic ASCII character set
Don't use bold, italic, underline, centering, indents, subscripts, etc.
Use ALL CAPS to visually emphasize information, such as titles of books or journals
The title of the file should be in ALL CAPS, visually centered, followed by two lines.
Do not indent the first line of a paragraph. Leave a blank line between paragraphs
Try not to use the concept of page numbers, but if you do, leave a line before & after ------.
References should refer to sections rather than pages, unless page numbers are required
At the end of the text, at the left margin, type *** Last update [mm/dd/yy (initials)] ***

Tips for converting existing files to ASCII for the gopher:

If created with desktop publishing or spreadsheet software:
Export or "Save As" a word-processed document (Word, WordPerfect, Winword)
If done on a Macintosh, open the document with Word or WordPerfect and "Save As" a format compatible with your PC wordprocessor. Translate to a PC-readable document
Open the document on a PC with wordprocessing software
Globally change non-ASCII formatting (i.e., italics to ALL CAPS)
Change the margins to left 0", right 1.5".
Change footnotes to endnotes.
Remove any references to page numbers within the document
Compare the versions, making sure that in its new format, it conveys the same information
"Save As" an ASCII document:
In Word or Word for Windows, choose DOS text with layout (*.asc)
In WordPerfect 5.1, Use Text In/Out (Ctrl F5) and choose DOS Text
Save or copy it to the Telnet directory on the computer you will use to ftp it to the gopher
To check a file for ASCIIness before loading on the gopher, open it with DOS Edit